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ABSTRACT

This document is a guidebook for counselors making presentations on how the school community can prepare students for the economic changes of the future. The first section provides a national view of the key forces shaping classrooms and board rooms, stressing the importance of demography and the science of distribution in general. This presentation focuses on: inteerpreting census data to discover large forces to which everyone must adapt; examining obvious facts such as that most of the new jobs will be in the service sector; and the reality of the decline of the middle class in a service-based economy. The second section focuses on particular issues facing western Pennsylvania, including its industrial decline, reasons for optimism, and characteristics of its labor force. This section concludes that job market awareness will have to change to reflect businesses' changing needs. The third section focuses on the shifting role of the school and college counselor in view of the information presented in the previous two sections. Recommendations made include: a broader definition of what constitutes a "good school"; attentiveness to rising dropout and pushout rates and a recommitment to vocational and other non-college preparatory curricula. (ABL)

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Changing World of Academia and Work

Getting the Message Out: Counselors in the Community

Introduction

This booklet was prepared specifically for those educators who recognize the need to share the data they received from **The Changing World of Academia and Work** seminar series.

The following material is divided into four major parts, each having a general introduction and a suggested presentation format. Some parts have additional data. Use whatever you like and deem important for the topic and audience. Feel free to include locally related facts and occurances, Consider making your own visuals. Do whatever is necessary to get the information across in a clear and concise manner.

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Project Coordinator

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Changing World of Academia and Work

Getting The Message Out: Counselors In the Community

Overview For Presentations

As residents of Western Pennsylvania, we need look no further than down our rivers and into our valleys for evidence of a changing economy at work. This region's shift away from its historic steel and heavy manufacturing base to a more diversified economy continues and with it the difficult transition of its workforce.

These developments sparked a group of concerned educators and community leaders into action in the early part of 1984. A planning body of organizations was formed and the first of its many initiatives — a three-part seminar series titled **The Changing World of Academia and Work** — resulted.

The planning body maintained as their focus for this series and future activities the question: How can the school community prepare students, parents, and educators for the challenges of the next decade and beyond? **The Changing World of Academia and Work** series was viewed as a first step in the process of bringing together useful information and assessing the needs of employers, educators, parents and most importantly, students themselves as each copes with this "third-wave" of economic change.

As educators and concerned citizens, we believe that the information presented during these initial activities is beneficial to the entire community. We would like to share with you some of the highlights from this series. What we learn here is critical not only to our children's future, but to the future of our community as a whole.

Part I A National View

Dr. Harold Hodgkinson

Dr. Harold Hodgkinson, a Senior Fellow at the Institute for Education Leadership, presented "A National View;" the opening seminar in the **Changing World of Academia and Work** series, January 9, 1985 at the Duquesne University Student Union.

In an address before more than 250 educators and community leaders, Hodgkinson outlined the key forces shaping classrooms and board rooms, stressing the importance of demography and the science of distribution in general.

Census Figures Interpreted

Hodgkinson's detailed analysis of Census figures and other statistical data shed light on a number of questions and issues facing school counselors and other educators charged with preparing and guiding children for the ever-changing demands of the job market.

Hodgkinson dismissed such labels as "futurist" or "fortune teller," stressing that his "predictions" were based solely on a close study of past trends and current facts, not on soothsaying or witchcraft. The key to the future, Hodgkinson said, is to look at the large forces to which everyone must adapt. "With one eye on the outside world," he said, "look carefully at the present for those things that will not change."

High Tech Hopes

Hodgkinson's litany of figures on everything from consumer shopping patterns to the racial composition of the Sun Belt began to shape an intriguing picture of this country's economic future. Consider:

Every week, 210 people reach the age of 100 and the 75-100 year-old age group is the fastest growing.

The Hispanic population will double in the next 15 years, reaching at least 18 million by 1990.

Six million households list the female as the primary "bread winner" or top wage earner.

Hodgkinson encouraged school counselors and others in attendance to "tune up on their environmental scanning abilities." Educators, parents and students must learn to "exploit the inevitable." He urged all concerned to gain an advantage by looking carefully at what is "obvious."

One fallacy shattered by Hodgkinson's remarks was the idea that high-tech represents a safety net for the unemployed and future job seekers. His figures show that of the estimated 21,000,000 new jobs to be created in the coming years, less than 1 million will be in the high-tech field. For every 23,000 engineers in demand, there will be a need for 750,000 sales clerks. Most (80-85%) of the new jobs to be created will fall in the service area (sales, maids, janitors, auto repair, etc.)

Service-Based Realities

Hodgkinson warned the audience that similar trends have been studied and followed in other countries and that one of the consequences of a service and information-based economy is the gradual decline and possible extinction of what we know as the middle class. They appear persistent and promise to be far reaching in their implication for all segments of this and other communities.

PART I - A NATIONAL VIEW

The following was prepared by Dr. I. A. Grignano, with imput from Ms. Lillian Carpenter, Mr. Charles Territo and Miss Bertha Townsend, as a possible presentation format.

THE NATION ACCORDING TO HAROLD HODGKINSON:

By Region, Race, Age, Family, and Business/Industry

REGION

1. Nationally, the decline in Public School enrollment is beginning to bottom out. We are in the midst of a small baby boom.

2. Migration from the Frost Belt to Sun Belt will continue throughout the 1980's. What does this mean? For our purposes it means that the United States is divided into two distinct regions, each having very different educational needs. A one nation educational policy will not work in such a situation. We have a two nation reality.

A. A youth oriented Sun Belt with a demand for more schools and a Frost Belt that will continue to decline in youth population. In the Sun Belt we have a real economic and social "action" zone. The Sun Belt has more:

1. youth
2. new jobs
3. corporate headquarters
4. political clout
5. minorities

B. A Frost Belt that will continue to decline in youth population, needing less schools and getting less support.

RACE

Nationally, the school population is shifting by race. 25% of all public school students have minority backgrounds. In some areas of the country, these percentages are even higher: For example:

46% in Texas
43% in California
33% in Arizona
33% in Maryland
32% in New York

Getting more specific, the black population in the United States will double in the next 15 years. Also, the United States will be home to 18 million Mexican Americans. This population reality has spawned a new demographic term known as minority/majority.

AGE

Starting around 1990, there will be an increase of the very young and the very old. In regard to the elderly:

By the year 2000 - 32 million Americans will be over 65
By the year 2020 - 45 million Americans will be over 65
By the year 2030 - 55 million Americans will be over 65

As to births, the next baby boom will occur in the Hispanic and Black populations. WHY? Because the average age of women in the Hispanic and Black groups are younger than the white group.

Average age of a White female is 31 years
Average age of a Black female is 25 years
Average age of a Hispanic female 22 years

Again, we see a situation that calls for a multi-policy reaction, dictated by region and race.

FAMILY

The typical American Family, husband, wife, and two children, ended somewhere around 1965. Currently, 22% of families have no children.

What can children in families expect in the years to come?

12% of children will be born out of wedlock
40% of children will be born to parents who will divorce before they (children) reach 18 years of age
5% of children will be born to parents who will end the marriage by separation
2% of children will be born to parents who will die before the child reaches age 18
40% of children will be born to a "normal" family situation.

When women enter the work force two things happen:

a. the dual-earner couple becomes the new rich
b. when women support their children alone, they become the new poor. This is happening more frequently in Spanish and Black populations.

BUSINESS/INDUSTRY

1. We are now in a service and Information System Economy; before we were in the manufacturing economy . The old system assured job mobility, this new system does not assure such. eg. nation-wide Federal Express has 140 Directors the rest of the employees are couriers.

2.There are fewer and fewer good job, but more and more poor ones. Surprisingly, the new jobs are not in high tech. Out of 21,000,000 new jobs, less than one million are in high tech field. Looking at it another way, for every 23,000 engineers, there is a call for 750,000 sales clerks.

The greatest growth will occur in the low paying and menial jobs (80-85% of new jobs are in sales, maids, janitors, auto repairs and other services). Only 15% of new job opportunities are in high tech area.

FROM GENERAL REVIEW TO GENERAL CONCLUSIONS

1. The potential is there for losing the middle class in the USA. It has happened in other countries. There is no middle class in the Service Industry.

2. Education is no longer a confering process. While our children may have more education and more political clout today, many however, will get the same jobs their parents got yesterday with only a 3rd grade education. This phenomenon is cause for much social dissatisfaction and unrest. In spite of this, we need to be concerned about minority education. We need to guarantee their achievement and success, if for no other reason than to secure our own place in society. The equation is now balanced. In the past, the minorities needed us and we didn't need them; now, the minorities need us and we need them.

In summary, we need to (1) concern ourselves with current trends, (2) be skeptical of the popular view of things, and (3) devise a process to scan and interpret our environment. Planning for the future demands good data and a good sense of where we are. According to Hodgkinson, the Past and Present is the best predictor of the Future.

IMPLICATIONS

What does this mean for education? For starters, we need to take a closer look at facility use, school mergers, revenues and programs.

1. How can we maximize facility use?
   a. year round education
   b. shared space

2. Would school mergers help our area?

3. How do we maintain current school revenue sources?
   a. keep the current taxing structure
   b. modify the property tax

4. How can the current curriculum offering be modified to meet these challenges?

What the Data Say

- The new baby boom is reversing the decline in birth rates and beginning to reverse the decline in school enrollment.
- The over-65 population now outnumbers teenagers.
- The average age of the white population is growing older; that of the minority population is much younger.
- Minorities constitute the majority of school enrollments in twenty-three of twenty-five of the nation's largest cities.
- By the year 2000, fifty-three major cities will have a majority minority population.
- The United States is seeking to integrate into North American culture the second largest wave of immigrants in history — a total of 13.9 million — many of them from Asia and the Pacific Islands.
- Population and education enrollments are continuing to shift from the Frost Belt to the Sun Belt.
- Hispanic population growth has been and continues to be the highest of all groups.
- Asian population growth (103 percent) was actually the highest of all groups during the 1970-80 decade, but this extraordinary growth resulted primarily from immigration and is considered a one-time phenomenon.
- Sixty percent of all Hispanics live in three states (California, Texas, and New York), 85 percent in nine states.
- Hispanics are the most urbanized group, with 88 percent living in cities, but more blacks live in inner cities than any other population group (71 percent).
- Black and Hispanic participation in education diminishes drastically at higher levels.
- The majority of blacks and Hispanics in higher education are enrolled in community colleges or predominantly black and Hispanic institutions.
- Serious erosion has occurred in the rates of black and Hispanic high school graduates who go on to college.

***Source:** Demographic Imperatives: Implications for Educational Policy, Report of the June 8, 1983 Forum on "The Demographics of Changing Ethnic Populations for Elementary-Secondary and Postsecondary Educational Policy", prepared by Ian McNett.*

Policy Implications

- Population and education trends could perpetuate the racial and ethnic division of American society.
- The recent emphasis on science and technology may increase minority underrepresentation in high-income, high-prestige jobs.
- High-technology and other economic changes also threaten the white- and blue-collar middle class with loss of jobs and economic status.
- Groups may be pitted against one another in the competition for scarce jobs and limited government services.
- Some projections forecast a truly high-tech future (i.e., requiring higher-order skills and paying well) for only a tiny proportion of Americans.
- Conflict also may result from the aging of the majority population and the youthfulness of the minority population.
- While the population and the economy are shifting South and West, large areas of economic and social disadvantage remain in the North and the East, especially in the large cities.
- America is becoming more diverse, not more homogeneous.
- Personal and national self-interest requires that the majority population address the needs of the minorities: for example, the retirement income of people at work today will depend on the productive employment of minority young people who are in school now, as will the future economy and military.
- The emerging demographics also suggest that national policy in education must become more diverse and flexible to serve the needs of varied regions and groups.

***Source:** Demographic Imperatives: Implications for Educational Policy, Report of the June 8, 1983 Forum on "The Demographics of Changing Ethnic Populations for Elementary-Secondary and Postsecondary Educational Policy", prepared by Ian McNett.*

What's Coming

In addition to a more diverse population, the nation will have larger numbers of minorities in proportion to the majority population. In many large cities, these minorities already are in the majority, and the trend will continue.

And the minority population grows younger and increases at a faster rate, while the majority population ages and slows down in growth. The minority population itself is growing more diverse largely because the Hispanic population is increasing in porportion through immigration and a higher birth rate. Immigration is also bringing in dozens of new nationalities from Asia and the Pacific Islands, as well as from Central and South America.

In the coming decades, urbanization of minority populations will continue. Regionally, the Sun Belt will continue to grow and the Frost Belt to decline.

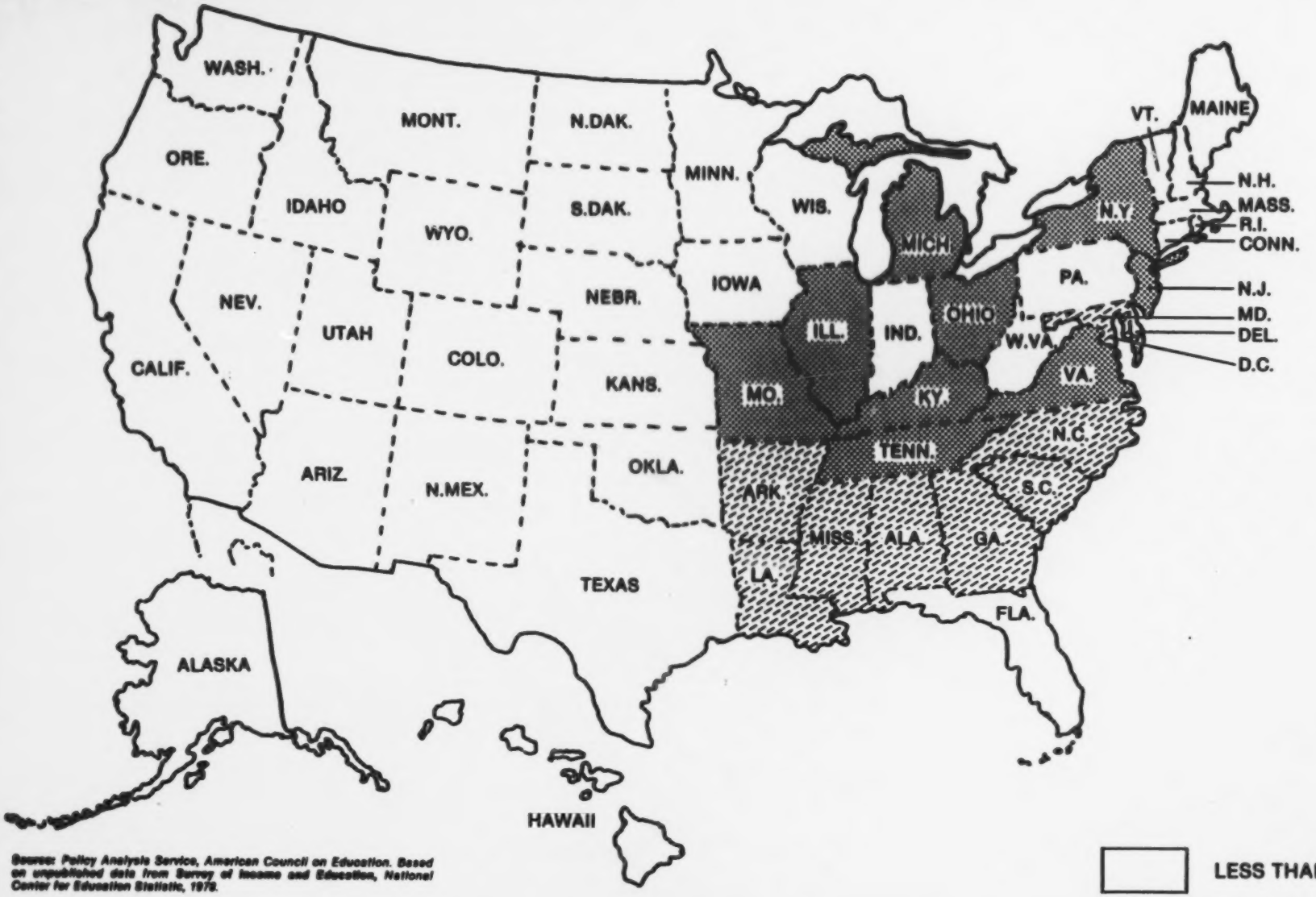
In education, the wave of declining enrollments now rolling through the system will reverse itself, but a very different education environment will emerge regionally, racially, and economically.

***Source:** Demographic Imperatives: Implications for Educational Policy, Report of the June 8, 1983 Forum on "The Demographics of Changing Ethnic Populations for Elementary-Secondary and Postsecondary Educational Policy", prepared by Ian McNett.*

Transparency — Part I

Percentage of Students with Minority Backgrounds (Minority/Majority)

Transparency — Part I



Source: Policy Analysis Service, American Council on Education. Based on unpublished data from Survey of Income and Education, National Center for Education Statistic, 1979.

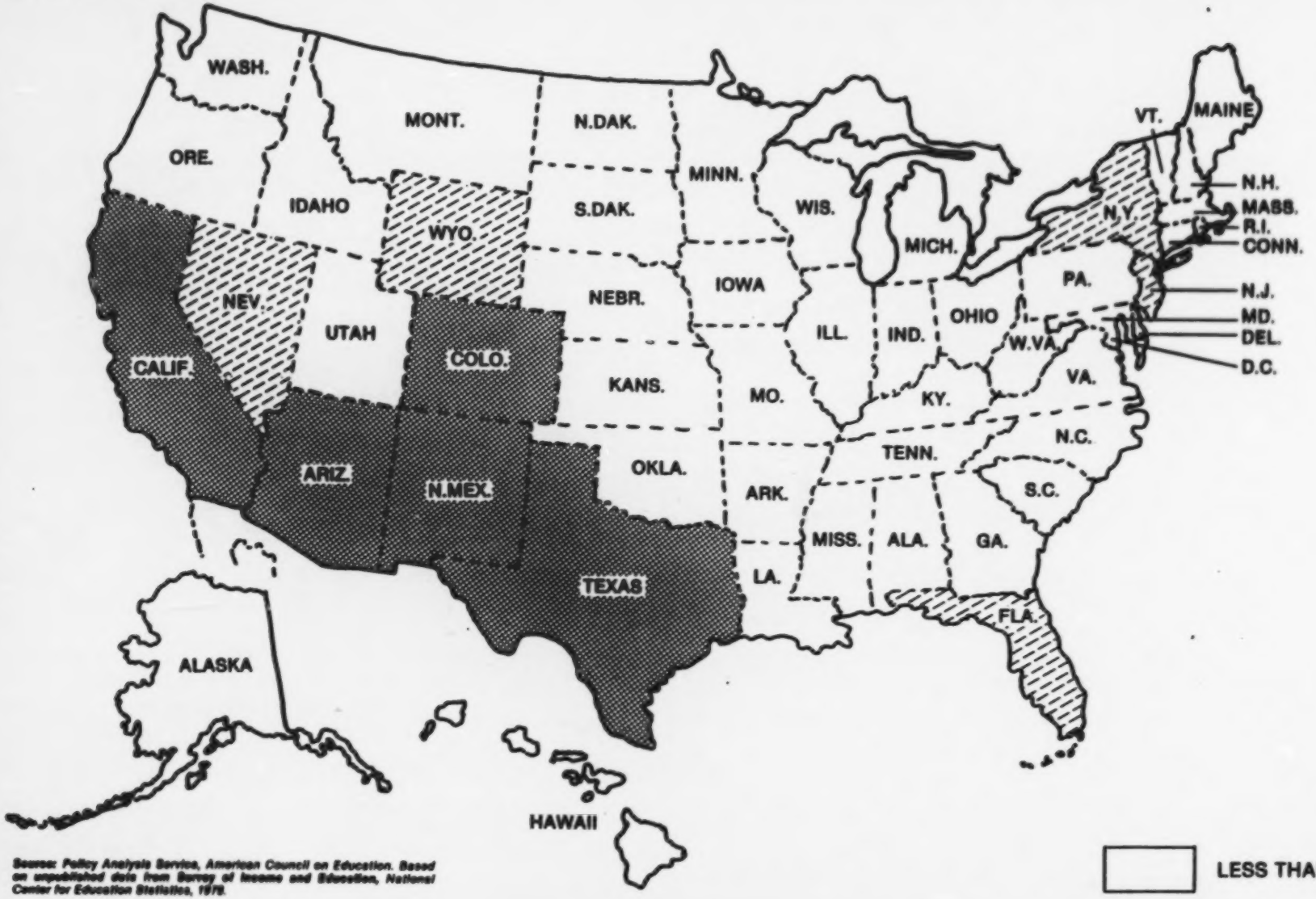
LESS THAN 10%

10 — 20%

MORE THAN 20%

State Comparisons of 18—24 Year-Old Black Population

Transparency — Part I



Source: Policy Analysis Service, American Council on Education. Based on unpublished data from Survey of Income and Education, National Center for Education Statistics, 1976.

LESS THAN 5%

5 — 10%

MORE THAN 10%

15

State Comparisons of 18—24 Year-Old Spanish-Origin Population

16

Part II A Local Perspective

Section A

What It Means For Pittsburgh

A Local Perspective, Part II of the **Changing World of Academia and Work** seminar series brought together area business, government and education leaders to reflect upon Harold Hodgkinson's remarks and to focus more closely on the particular issues facing the residents of Western Pennsylvania.

Confusion over where this area falls in the overall national picture is cause for the mixed signals we have been receiving. The true identity of this region most likely lies somewhere between the despair shared by those cities lumped in the group labeled "Rust-Belt" and the assurances that come with Rand McNally's number-one rating. this second seminar outlined the causes of industrial decline that led to the former as well as the region's strengths responsible for the latter.

Western Pennsylvania's Industrial Decline

Understanding the causes and forces behind this region's economic declines and shifts requires a couple of working definitions:

Competitive Advantage — If an industry in a region is growing, and if comparable industries in other parts of the nation are not growing, or growing less rapidly, then we have a competitive advantage.

Competitive Disadvantage — If comparable industries in other parts of the nation are growing faster than us, then we are at a competitive disadvantage.

Some companies in Western Pennsylvania operated at a competitive disadvantage, and as such, did poorly or failed. United States Steel for example, depended on buyers outside of this region and thus fell into a competitive disadvantage.

The decline in the area's steel industry took place gradually. Between 1961 and 1984, 69,000 workers lost jobs in the steel industry, dropping employment from an all-time high of 135,000 down to the current level of about 48,000 and the decline has yet to bottom out.

We know that these changes in industry brings about a chain reaction in the surrounding economy. The decline in steel and other manufacturing jobs produces a drop in the support services and eventually means less jobs in all areas such as government, transportation and other services.

Reasons for Optimism

The following figures, compiled by Penn's Southwest, a non-profit economic development organization, begin to explain Pittsburgh's recent crowning as "America's Most Liveable City," and give reason for cautious optimism when considering the region's economic future.

Pittsburgh lies within 500 miles of 52% of the nations' population; 12 of the top 25 retail markets and 22 of the top 35 industrial markets.

Pittsburgh is 3rd as a major corporate headquarters center in the U.S. with 14 FORTUNE 500 industrial companies and 4 FORTUNE SERVICE 500 companies.

Home of the Department of Defense Software Engineering Institute and 415 other high-tech facilities which employ 33,800.

Considering the above analysis and other information regarding Pittsburgh's quality of life and multitude of educational opportunity, we can begin to forecast what kind of region Southwestern Pennsylvania is becoming. The potential exists for this region to grow in the following areas:

As a financial services and medical center with the next boom to come in the areas of medical technologies and services.

As a center for industrial automation research and technology with the American Robotics Institute leading the way.

As an advanced software technology center with concentrations in artificial intelligence, Ada language and software, and the 5th generation computer.

Clearly, Western Pennsylvania is making the transition from an industrial and manufacturing center to a service and information-oriented community. Technology is quietly, but steadily changing the face of this region and this new economic climate calls for new and innovative partnerships between the public and private sectors.

Part II A Local Perspective

Section B

A Look at Labor

Returning to Harold Hodgkinson's use of demography, we can sketch a profile of our region's labor force and begin to recognize some of these "large forces" Hodgkinson pointed to as critical in understanding where we are headed.

One of the most important and somewhat surprising statistics shows that while our population is decreasing by 8%, the labor force competing in the job market is increasing by 14%. This seeming paradox is explained by greater employment among women and minorities with a concentration coming in the service industries. These figures also reveal the effect of redistributing to percentages of women versus men in the work force. By 1990, 70% of all women will work for reasons that include economic necessity, greater acceptance of women working, more woman professionals and an increase of jobs in the service industries.

Hodgkinson's figures showed that while the average age of Pennsylvania's population is the third oldest in the nation, it has stabilized while many other states are experiencing a rapid aging as younger people leave looking for better opportunities. The racial profile of the work force in this region is predominantly white — 93% versus 7% black. This can be attributed to high unemployment among blacks and the low concentration of blacks in the area.

Despite its mill-town image, Pittsburgh actually has a labor force that is mostly white collar (57%) with blue collar (32%) and service and farming representing the remaining work force. White collar and service employment will increase while blue collar will decrease in the future.

Conclusion

A new vitality and spirit emerged from this second seminar and while the educators and others in attendance were reminded of the economic hurdles that face this region, they also were given hope for the future. Our understanding of the economic transition taking place in Southwestern Pennsylvania was bolstered by the many speakers, each of which lent a unique perspective on the issues at hand.

Some of the conclusions reached were:

We may still see the steel industry in the area, but in a very modified form. Land once used for large manufacturing purposes will be subdivided and converted into smaller sites.

Industrial revitalization for Western Pennsylvania will be a gradual process and for the most part not very visible. Experts predict a 25-year period of restructuring.

Job market awareness among students, parents and school counselors will have to go a revamping and course will have to change to reflect business's changing needs.

That final recommendation for school counselors and other educators was explored further in the third and final seminar in the **Changing World of Academia and Work** series.

PART II - A LOCAL PERSPECTIVE

The following was prepared in part by Pam Morrison, Kathleen Perrine, Todd Erkel, and L. A. Grignano as a possible format.

Let us talk about the changing relationship of education and work, here in Pittsburgh and the surrounding area. There have been, of course, profound changes in the past few year. What does all this mean, and how will it affect students, family, business and community? To discuss these questions and related concerns consider the following categories:

1. The Bad News
2. Reasons for Western Pennsylvania's Industrial Decline
3. The Good News

The Bad News

When compared to the past, the steel industry is dead. We may still see the steel industry in the area, but in a very modified form. Large manufacturing is also becoming a thing of the past in the Pittsburgh area. The land previously used for large manufacturing will be converted to smaller industrial sites. Where there was once one large corporation, there may be several smaller ones. Those large areas of land are being sub-divided along with the utilities. This takes time.

Industrial revitalization for Western Pennsylvania will be very gradual and for the most part, not very visible. The Mon Valley is a good example of this. Here, the area was put together to accommodate large industry. As a result we have facilities geared to heavy manufacturing. Over a period of time, this area and others like it will be converted into smaller industrial sites for light manufacturing. This makes the area more affordable and useable. The results, however, will never parallel the activities of the past, or such companies as United States Steel. Experts predict a 25 year period for restructuring and recovery.

Reasons for Western Pennsylvania's Industrial Decline

It is important for you to know that causes these economic declines and shifts. For this we need to look at two very important economic terms.

> Competitive Advantage: What does it mean? It means that if an industry in a region is growing, and if comparable industries in other parts of the nation are not growing, or growing less rapidly, then we have a competitive advantage.
>
> Competitive Disadvantage: What does it mean? If comparable industries in other parts of the nation are growing faster than us, then we are at a competitive disadvantage.

United States Steel, for example, depended on buyers outside of this region, thus causing them to operate at a competitive disadvantage. The decline in steel took place over a long period of time. Between 1961 and 1984, 69,000 workers lost

jobs in the steel industry. It went from an all time high of 135,000 employees down to the current level of about 48,000. The decline has yet to bottom-out.

We also know that large industry downsizing causes changes in the local government. Decline in steel jobs produces a decline in local government employment jobs.

The Good News

Despite all this bad news, there is cause for optimism in the Pittsburgh area. There are important positive factors operating currently and in our favor.

1) Pittsburgh's location provides an excellent market proximity. Within a 500 mile radius of our area is 52% of the nation's population, 2 of the top 25 retail metropolitan markets, and 22 of the top 35 industrial markets.

2) Studies have shown that we have an excellent quality of life. We have low housing and living costs, an established and thriving cultural center with theatre, dance, music, and the visual arts, abundant recreational opportunities, excellent health care facilities including 61 hospitals and an internationally renowned medical center, a moderate climate, and low crime rates. (All this and the Steelers, too.)

3) Pittsburgh is a transportation hub with overnight truck service to New York, Philadelphia, Washington, D.C., Baltimore, Cleveland, and Chicago via 4 interstate highways. Seventeen national and commuter airlies provide non-stop service for over 9 million passengers to 83 cities in the U.S. and Canada. Three rivers provide inexpensive water transportation, and make Pittsburgh the largest inland port in terms of tonnage.

4) Pittsburgh is 3rd as a major corporate headquarters center with 14 Fortune 500 industrial companies and 4 Fortune Service 500 companies. We also have approximately 190 foreign owned facilities.

5) There is an important and growing high technology industry in the Pittsburgh area. Pittsburgh is now the site of the D.O.D. Software Engineering Institute, and also has 415 high tech facilities employing 33,000; and 206 companies involved in manufacturing electronic subsystems, instruments and electronic components.

6) Pittsburgh is a major financial center with nationally ranked bank corporations, (PNB, MELLON, EQUIBANK) whose combined assets exceed $44 billion; more than 35 major regional banks and savings and loans, and six foreign bank offices; 9 venture capital firms and a newly established seed capital fund.

7) Pittsburgh government provides a positive business climate. There are no unitary or inventory taxes. We recently lowered corporate net income tax, and we offer customized job training programs.

8) We have over 100,000 students enrolled in 29 colleges and universities with diverse and excellent programs which are nationally recognized.

All of these are cause for optimism. While this economic transition continues to play havoc with many lives, Western Pennsylvania is changing from an industrial

and manufactuing community to a service oriented metro area, where the economic future will depend on many industries.

During this time of transition, the statistics of the Pittsburgh area are also changing.

The general people trend for the area will continue to change. While our own population is decreasing by 8%, the labor force is increasing by 14%. This seeming paradox is explained by greater employment of women and minorities, basically in the service industries. This also has the effect of redistributing the percentages of women vs men in the work force. By 1990, 70% of the women will work. The reasons for this are economic necessity, greater acceptance of women working even in traditional ethnic cultures in which employment by females was previously discouraged, more professional women, and more jobs in the service industries.

The racial profile of the labor force in Southwestern PA is predominately 93% white, versus 7% black. Two reasons for this are hgher unemployment among blacks and our population distribution. This area does not have as many blacks as some other urban areas and this does not appear to be changing.

While Pittsburgh has always been thought of as a blue collar mill town, the labor force is now mostly white collar and not blue collar. Presently the picture looks like this:

White Collar	Blue Collar	Service	Farming
57%	32%	16%	

As for the future, white collar jobs will increase, blue collar jobs will decrease, service will increase and farming will decrease.

Overall Southwestern PA's occupational make-up is approaching national averages.

All these changes call for new partnerships among community, business, education and family. Counseling and career planning for students will take on new dimensions.

Counselor role will involve:

- informing students and parents of changes in the job market qualifications and needs
- revising belief structure concerning job opportunities such as:
  - --college education is needed to get a good job and the more education you have the better the job (education will not confer success or livelihood
  - --by 1990 70% of all women will work; men are not the only work force
- courses teaching flexibility, creative problem solving, individual goal setting and other communication skills
- providing materials to support job awareness for classroom teachers
- design and setup exchange programs between the classroom and business office.

The challenge is here! Everyone must get involved to provide success stories for the students of today, 1985.

Part III Implications For The Counselor

Dr. Roger Aubrey

Dr. Roger Aubrey, a professor of psychology and education at Vanderbilt University presented "Implications for the Counselor," the third seminar in the **Changing World of Academia and Work** series. The focus of Aubrey's address was the shifting role of the school and college counselor in view of the information presented in parts I and II of this series.

Educational Reform and High-Tech

Dr. Aubrey pointed to educational reform and high technology as two of the most powerful and significant forces affecting students and educators today. Both are ideas that have captured the attention of the American public, Aubrey stressed, and both hold great promise in the minds of many people as they look to the job market of the next two decades.

Aubrey then pursued the validity of that promise, and warned counselors, that they more than anyone would bear the brunt of change brought on by those two forces. Aubrey went so far as to accuse proponents of both the high-tech salvation and the sweeping educational reform of suffering from a myopic view of the long-range job prospects for the majority of the country's young people. Calls for a single, required curriculum heavy with college prep, math and science courses signal a shortsighted and naive view of the work world, Aubrey contended. The ultimate danger of this shortsightedness could be a destruction of the middle class as we know it, leaving a two-class system — the served and unserved — both in and out of school.

Recommendations for Change

Dr. Aubrey recommended the following steps to avoid falling into the void left by proposals for sweeping change that lack comprehensive planning and supporting data:

A broader definition agreeable by all parties of what makes a "good school."

Attentiveness to rising drop-out and push-out statistics which are increasing for the first time in two decades.

A recommitment to vocational and other non-college preparatory curriculum.

A school-by-school approach to curriculum and other changes with greater involvement on the part of the teachers, parents and students.

Aubrey pointed to the Boston Public School System as an example of how change must be made to fit the patient. In contrast to many middle-class, suburban districts, Boston must deal with a 50% drop-out rate, and a student population that is 70% minority, 40% economically and educationally disadvantaged and 12% bilingual. Aubrey asks, "Does anyone believe a standardized pre-college curriculum will work in the Bostons of this nation?"

High-Tech Hocus Pocus

High-tech, like educational reform, often projects a world for our children that would best be described as fantasy, according to Aubrey. "The major assumption counselors need to test is one that sees plentiful jobs in high technology areas over the next two decades." He urged all parties to reconsider Labor Department figures with an understanding of "fastest growing" versus "highest growth rate." It is the latter that signals where the jobs will be for young people in the next decade and the numbers show those jobs to be in the service industries not high-tech.

Aubrey went on to echo much of the same statistical evidence used in Part I by Harold Hodgkinson, concluding that high-technology "will not contribute much to the creation of real jobs over the next decade." The winners in this movement toward educational reform — if the current course is continued — will be the approximately 32% of high school students who manage to graduate and go on to college. The losers, Aubrey argues, are the remaining students who will be forced to confront a job market ill-prepared and unskilled. Meeting the needs of this silent majority will require refocusing on some of the following skills and issues:

Good communication and interpersonal skills, the primary requirement of most service-industry jobs.

Adaption skills necessary in a time of rapid change and geographic upheaval. The ability to cope with job loss, displacement and periodic need for retraining will be essential.

Counselor's Challenge

Despite his warnings, Aubrey insists that he is not opposed or resistant to either educational reform or the coming of high-technology into the workplace. Both forces, he says, are well-established, firmly supported and have "much to offer schooling." The important factor is who shall lead these forces into the classrooms and will that leadership have the best interest of ALL students in mind? The obvious solution is for the counselor to redefine their role and welcome that leadership position.

The steps necessary to accomplish that change according to Aubrey, are as follows:

Stress the role of counselors as EDUCATORS in the schools, underplaying but not eliminating their therapeutic skills.

Update the information and knowledge at hand for counselors on high-tech, educational reform and other subjects.

Encourage counselors and administrators to establish a growing body of resource material — written and other — on such topics as future job trends and other vital information of interest to students and parents.

As you will see by looking at the brochure entitled Education and the Changing Work Place: A Community Challenge, many of these recommendations have already been initiated. The counselors of Allegheny County have accepted the opportunities placed before us; and with the help of various community organizations and business leaders, our efforts will prepare students for the changes occurring in the workplace.

PART III - IMPLICATIONS FOR THE COUNSELOR

The following was prepared in part by Dr. Katherine S. Atman and Dr. Robert M. Wilson as a possible presentation format.

"You've got to reach high to grab a rainbow" (a slogan from a button at a recent employment conference.)

The turbulent everchanging 1980's and 90's offer a great challenge to educators. Preparing our children to cope with a high-tech, third wave, dynamic world must become and remain our top priority. The increases in technological knowledge and the wide spread use of new concepts and methods for even the most menial jobs is incongruous with the increasing dropout rate, epidemic alcohol and drug use and staggering suicide rate.

Employers, parents and students themselves are expressing dissatisfaction with our educational system. Let's explore together the challenges of developing individuals with the skills to cope with a creative, productive, growing society.

Common Terms and Definitions Associated with High Technology

Let's look at some common terms and definitions:

Automation - The control of machines by machines or computers to aid in the mass production of goods.

Computer - An information-processing machine aided by a specific set of instructions called a program.

CMPM - Computer-managed parts manufacture, a form of factory automation in which a computer is placed in charge of running the machines in addition to manipulating the robots and conveyors that move work from one machine to another.

Hardware - The actual physical elements comprising the computer system (disk drives, printers, transistors, computer terminals, and so on).

Micro-electronics - Activity resulting in complex electronic circuits being placed on small chips of silicon.

Microprocessor - A silicon chip used in a computer to carry out orders from a prepared program.

Robotics - The field concerned with constructing robots to perform complex acts similar to those of humans.

Silicon Chip - Tiny pieces used to store electronic circuits; may contain instructions, as well as the data used in calculations, on a computer.

Software - the actual programs executed by the computer. Application software means programs actually intended for and by the computer. System software means programs that help individuals construct and carry out additional programs.

Technology Voice-sensitive Computer - The use of tools to aid in work. A computer that recognizes and obeys verbal commands from specific individuals.

Word Processing - Entering a text, article, letter, or book into a computer. Once stored, changes can be made by adding, deleting, or revising the original message.

What will the potential consequences of High Tech be in the forseeable future?

FIRST, high technology will force most people to adjust and adapt to rapid change. In some instances this will occur because of job loss, displacement, or the immediate need for retraining. In schools this may require modifications in school curriculum, course selection, number of Carnegie units, and so on. For many it means at least some hands-on experience with computer hardware and software. For counselors it means dealing with individuals who resist or lack adequate coping skills in a period of too much change and an overload on the human capacity for adaptation.

SECOND, retraining and multiple career shifts will characterize the economic life of many clients . Counselors especially must approach this area realistically. On surface the retraining of dispaced individuals seems a likely solution to unemployment; we simply exchange one job for another after retraining. Before accepting this easy premise, however, counselors should be aware that: (1) retraining is no automatic guarantee of a new job, and (2) even when a new job is forthcoming, it may be a position of less pay and prestige. This has already occurred with former auto and steel workers who have found service and electronic assembly jobs reducing their standard of living by as much as 50% (Karmin. 1984).

THIRD, geographic upheaval will be a way of life for many . This geographic movement will affect winners and losers alike. Auto and steel workers have already been forced to leave the Northeast and Midwest to seek new jobs. The same holds true for those seeking positions in the new high tech industries. The element of frequent geographic moves is an added concern for counselors at a time when the stability and influence of church and home are declining. Geographic upheaval will add to human problems as it forces families and individuals to often leave behind established social support networks and close.

FOURTH, many clients of counselors will be victims of

downward mobility . This decline in either income or job status is related to a person's basic self-esteem. The seriousness of downward mobility is well expressed by Baumgardner (1982) who noted that "The present generation may be the first in many decades unable to surpass or even achieve the status and income of their parents" (p. 213). Counselors, in particular, will see more than their share of persons devastated by being forced to take lower paying and less prestigious jobs.

FIFTH, the self-esteem of many clients who are overly reliant on values related to work will demand the attention of counselors (Marshall, 1983). This will require different approaches depending on the circumstances the client experiences. For example, being displaced and retrained for a lesser position is somewhat different from being laid off and termed permanently unemployable because of technological obsolescence. Similarly, the college-educated person with unrealistic job aspirations may well experience depression and poor self-esteem when facing forthe first time the realities of the high tech job market.

SIXTH, most Americans over the next two decades will find themselves with more and more leisure time . Through high technology, goods and services will be more rapidly and efficiently dispensed to the public. This will result in shorter work weeks (or no work for some!). Also, time saving devices for work and home will give Americans additional time. Add to this early reirement and the growing number of older people, and we have an unprecedented era of leisure time. This is a major social problem because as people acquire more time, in most instances their resources are declining. In a consumer-oriented society this is a major concern because of the close relationship between free time and consumption. A related problem is the fact that many people simply do not know how to use leisure time wisely for recreation and restoration.

SEVENTH, an increase in stress will be an inevitable consequence of high technology, rapid change, geographic upheavals, worker displacement, frequent career changes and competition to acquire and keep a job . This stress will be manifest in multiple areas such as health deterioration, psychological problems, marital difficulties, child and wife abuse, homicide and suicide, divorce, and so on. Collectively, the problems presented by stress may overwhelm the medical and mental health profesions in times to come. Ths is possible because even now millions in our society are vastly neglected in terms of medical and mental health treatment (Albee, 1977; Reiger, Goldberg, & Taube, 1978).

EIGHTH, we may as a society be on the verge of seeing the total demise or loss of the Protestant Ethic . We know that up to the present time Western Society has operated under the assumption that work is vital to society. This belief has permeated our economic and religious values (Tawney,

1926; Weber, 1930). High technology and its economic and social ramifications may well lead many to question the idea that work has either intrinsic work or meaning for many Americans. Many jobs of the present and future will be positions that are dull, routine, unimaginative, and boring. If we add to the ranks of those holding these servile jobs the projected number of unemployed and displaced workers, we could have millions of indiviuals alienated from a major premise of Western society.

Recommended core competencies for our children necessary to cope with a changing world.

Command of the English Language The panel predicates this list of competencies on possession of the most basic skill of all-a command of the English language, which it believes to be essential for success and mobility in American society. Although a second language may be useful in job mobility, all American young people, regardless of their home or native tongue, need a functional command of standard English in its written and spoken forms.

Reasoning and Problemsolving The capacity to reason and solve problems is the central indication of an educated person. Throughout their working lives, individuals will encounter problems or situations with various possible solutions. The ability to understand the consequences of alternative courses of action is an essential condition for success in employment. Well-developed reasoning capacity requires a person to be able to.

* Identify problems
* Consider and evaluate possible alternative solutions, weighing their risks and benefits
* Formulate and reach decisions logically
* Separate fact from Opinion
* Adjust to unanticipated situations by applying established rules and facts
* Work out new ways of handling recurring problems
* Determine what is needed to accomplish work assignments.

Reading Each student needs to be able to read, comprehend, and interpret written materials. Job success often hinges on following written instructions, manuals, or lables. Workers must frequently use catalogs and reference books, read and draw inferences from correspondence and reports, and interpret correctly forms such as vouchers, requisitions, and work orders. Neither reading nor writing is taught separately in most high schools. However, every course in every academic subject can require students to read and write critically and extensively. Competent reading requires the ability to:

* Understand the purpose of written material
* Note details and facts
* Identify and summarize principle and subsidiary ideas
* Be aware of inconsistency in written material
* Verify information and evaluate the worth and objectivity of sources
* Interpret quantitative information; for example, in tables, charts, and graphs.

Writing It has been said that a person can write no better than he or she can think. All students need to be able to organize information and state it clearly and concisely in a written form that is grammatically correct. Employees in many lines of work are called upon to fill out forms, documents experiences and procedures, record events, and present their ideas in memorandums, letters, and notes. Skillful writing requires the ability to:

* Gather information suitable for the purpose
* Organize information in a logical and coherent manner
* Use standard English syntax
* Apply the rules of correct spelling, punctuation, and capitalization
* Attribute references correctly
* Use reference books such as a dictionary, a thesaurus, and an encyclopedia
* Write legibly.

Computation All sstudents need to be able to understand and apply basic mathematics, at least through elementary algebra. An understanding of geometry and trigonometry is desirable. Countless work tasks require computations of cost, time, volume, area, percentage, fractional share, and other mathematical relationships. Precise computation requires that a person be able to:

* Add, subtract, multiply, and divide whole numbers, decimals, and fracions accuratly
* Calculate distance, weight, area, volume, and time
* Convert from one measurement system to another, for example, from English to metric
* Determine the costs, time, or resources necessary for a task
* Calculate simple interest
* Compute costs and make change
* Understand simple probability and statistics
* Calculate using information obtained from charts, graphs, and tables
* Use ratios, proportions, percentages, and algebraic equations with a single unknown
* Estimate results and judge their accuracy.

Science and Technology Whether employed in a factory,

farm, office, shop, or retail store, American workers need to feel comfortable with technology.

Many jobs, of course, demand specific understanding of the physical and biological sciences, including the practical experience developed in laboratory work. Technical occupations of all kinds-in the fast-growing medical and health service yields, in communications, and in the military services-call on workers to deal effectively with mechanical and electronic equipment.

As the use of advance technologies becomes ever more pervasive in our economy, schools must encourage students of both sexes to acquire a firm grounding in science and technology. Lack of an adequate scientific background, and technological experience has precluded many, especially women, from competing for large numbers of desirable jobs in the past.

High school graduates, therefore, need the confidence that they can understand how things work. Nothing builds this confidence so effectively as the study of specific technologies and the scientific principles underlying them. While devices may consist of thousands of parts, individual parts are often simple, as are the rules for their interacion. Facility with technology comes from understanding these rules and in working with devices embodying them. That, the panel believes, is best achieved by combining classroom study with practical experience in school laboratories or outside school; for example, learning the principles of chemical combinations and performing simple chemical reactions; learning the basic electrical laws and operating a voltmeter; and studying the thermal properties of solids and examining the strucure of an integrated ciruit chip.

Competency in science and technology includes the ability to apply the scientific method, whether or not it is labeled as such; that is, the ability to formulate and state hypotheses, and then to evaluate them by experimentation or observation. That competency will serve all graduates, whether they work in technical occupations or not. It serves, for instance, in localizing a problem in a word-processing system, in repairing mechanical systems, or in identifying the source of a recurring error in computation.

Further, the well-educated high school graduate will be able to apply the basic principles of the physical, chemical, and biological sciences to work. Thus, high school graduates competent in the basic sciences will be able to evaluate risks better, understand the rationale for industrial processes, and even suggest how they might be improved. The particulars are less important than the generality: that knowledge of science and technology dissipates unknowns, and enhances confidence in one's ability to analyze and solve a problem.

Finally, education in science and technology should include acquaintance with computers. That does not necessarily mean learning programming languages and the like, but it does mean acquiring knowledge of the basic

functions of computers; knowing what they can and cannot do; some familiarity with the basic components of a computing system; and an understanding of the possibilities and limits of frequently used software packages such as word processors, data-base management systems, and electronic spreadsheets.

Oral Communication Success in any job requires, among other things the aptitude to communicate thought, knowledge, and information through speech, whether with supervisors, co-workers, customers, or the general public. Competent oral communication includes the ability to:

* Communicate in standard English
* Understand the intent and details of oral communications
* Understand and give instructions
* Identify and summarize correctly principle and subsidiary ideas in discussions
* Obtain, clarify, and verify information through questioning
* Participate effectively in discussions.

Interpersonal Relationships Success in a career depends on the capacity to deal constructively and effectively with others. In turn, this depends on a knowledge of behavior appropriate to and customary in the workplace. Young people must understand that the standards of behavior, speech, and dress expected of exployees often differ markedly from those acceptable in student circles. They also must realize that conflicting interests and opinions are inherent in many social interactions, but that such conflicts can and should be resolved through constructive means. Finally, they must recognize that employers cannot tolerate behavior, even if innocently intended, that offends customers, colleagues, other employees, or members of the general public. Effective interpersonal relations require the ability to:

* Interact in a socially appropriate manner
* Demonstrate respect for the opinions, customs, and individual differences of others
* Appreciate the importance and value of humor
* Offer and accept criticism constructively
* Handle conflict maturely
* Participate in reaching group decisions

Social and Economic Studies Understanding how emp'oyees and employers fit into the economic structure of the community and country is essential to an appreciation of one's own contribuions and responsibilities. Young pe ple should realize that private employers purchase services in order to provide a product or service at a profit so that they can stay in business, while public employers must adhere to rules of public accountability. Only employees who contribute to these goals are likely to keep their jobs or advance in them. Students can gain this understanding

best through a knowledge of how the American society and economy function, how various groups and interests interact, and what they can expect of one another. Adequate social and economic knowledge requires an understanding of:

* The history of present-day American society
* The political, economic, and social systems of the United States and other countries
* The fundamentals of economics, including a basic understanding of the roles of money, capital investment, product pricing, cost, profit, and producivity, and market forces such as supply and demand
* The concept of "trade-offs" and the differences between economic principles, facts, and value judgments
* The roles of industry and labor in creating wealth, maintaining employment, and raising the standard of living
* The forms and functions of local, state and federal governments
* The rights and responsibilities of citizens
* Civil rights and justice in a free society.

Personal Work Habits and Attitudes Personal work habits indicate the level of responsibility one is capable of assuming. Positive habits and attitudes contribute significantly to success in performing tasks, dealing with others, and gaining employment. They are also vital to success in school and should be cultivated long before a student enters the work force. Constructive work habits and attitudes require:

* A realistic positive attitude toward one's self
* A positive attitude toward work and pride in accomplishment
* A willingness to learn
* Self-descipline, including regular and punctual attendance and dependability
* The ability to set goals and allocate time to achieve them
* The capacity to accept responsibility
* The ability to work with or without supervision
* Appropriate dress and grooming
* An understandig of the need for organization, supervision, rules, policies, and procedures
* Freedom from substance abuse
* Appropriate personal hygiene

In order to fulfill the promise of the future, new partnerships must be developed

Kids with
Schools
Parents
Businesses

Industry
Military
Government
Community Groups
Peers

Parents with
Kids
Schools
Other Parents
Businesses
Community Groups
Government

Schools with
Kids
Parents
Community Groups
Business/Industry
Higher Education

Businesses with
Schools
Community Groups
Higher Education
Employees (current and perspective)
Government

CLOSING STATEMENT (Quote)

"Our children are not our future, we are our children's future" (Morris Massey).

In the future one of the trends we are positive of is change, an increasing rate of change. The High-Technology of the present era will be viewed by future generations the same way air travel is viewed by the current generation. Many of the most startling discoveries and inventions will be seen as common-place. It is essential that we and our children understand the uses of High-Tech objectively, and judge it by its increase in productivity and its potential to raise our standard of living.

RESOURCES: Impact of High Technology and Educational Reform on Young People and Schools Aubrey, R.F. 1985

What Counselors Should Know About High Technology Aubrey, R.F. and D'Andrea, M. Counseling and Human Development, September, 1984

High Schools and the Changing Workplace...The Employer's View National Academy Press, 1984

To Achieve These New Partnerships

We Must

COMMUNICATE

COMMUNICATE

COMMUNICATE

!

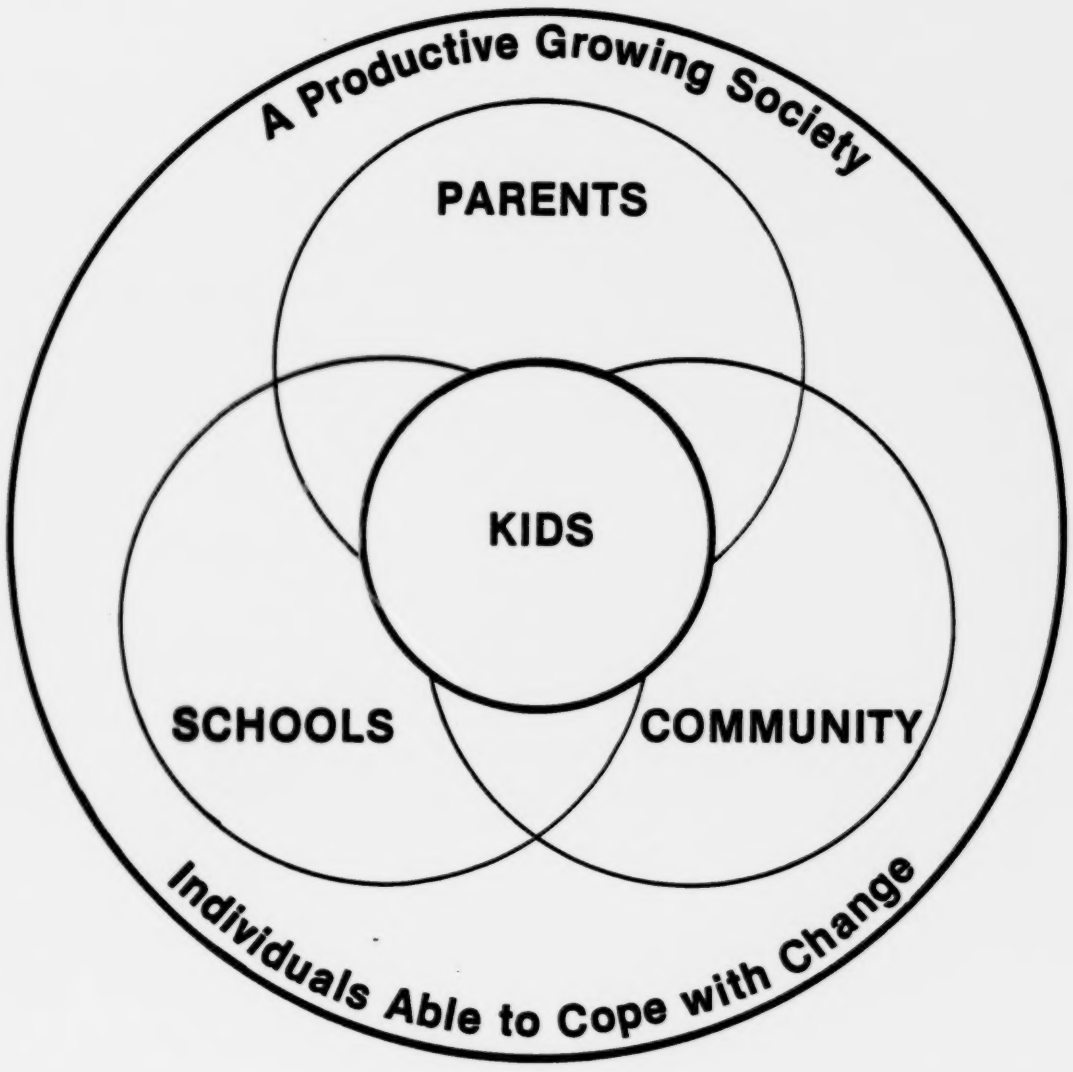
Transparency — Part III

OUR CHILDREN ARE NOT OUR FUTURE.

WE ARE OUR CHILDREN'S FUTURE.

— Morris Massey

- **In order to fulfill the promise of the future for young people, new partnerships must be developed so that needed skills will emerge.**



Recommended Core Competencies For A Changing World

1. Command of the English Language
2. Reasoning and Problem Solving Skills
3. Reading
4. Writing
5. Computation
6. Science and Technology
7. Oral Communications
8. Interpersonal Relationships
9. Social and Economic Studies
10. Personal Work Habits and Attitudes

What Will Be Potential Consequences of "High Tech"?

1. High technology will force most people to adjust and adapt to rapid change.

2. Retraining and multiple career shifts will characterize the economic life of many clients.

3. Geographic upheaval will be a way of life.

4. Many clients of counselors will be victims of downward mobility.

5. The self-esteem of many clients who are overly reliant on values related to work will demand the attention of counselors.

6. Most Americnas over the next two decades will find themselves with more and more leisure time.

7. An increase in stress will be inevitable consequence of high technology, rapid change, geographic upheavals, worker displacement, frequent career changes and competition to acquire and keep a job.

8. We may as a society be on the verge of seeing the total demise or loss of the Protestant Ethic.

THE CHALLENGE:

What Does It Take To Build

WE ARE RAPIDLY MOVING INTO AN ERA CHARACTERIZED BY HIGH TECHNOLOGY.

WHAT DOES THIS MEAN?

Let Us Look At Some Common Terms

Automation

Computer

CMPM

Hardware

Micro-Electronics

Robotics

Silicon Chip

Software

Technology Voice-Sensitive Computer

Word Processing